

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference E27757 RLI/JOB		FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/NO2003/000084	International filing date (day/month/year) 11.03.2003	Priority date (day/month/year) 14.03.2002	
International Patent Classification (IPC) or national classification and IPC A23K 1/00, C11B 5/00, A23D 9/06			
Applicant Norsk Hydro ASA et al			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 1 sheets, as follows:
 - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input checked="" type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

Date of submission of the demand 10.10.2003	Date of completion of this report 21.06.2004
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88	Authorized officer Per Renström/EÖ Telephone No. +46 8 782 25 00

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International Application No.

PCT/NO2003/000084

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☐ the international application as originally filed/furnished

- ☒ the description:

pages 1-7 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☒ the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 1 (claims 1-4) received by this Authority on 04.05.2004

pages* _____ received by this Authority on _____

- ☒ the drawings:

pages 1/1 _____ as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets/figs _____

☐ the sequence listing (*specify*): _____

☐ any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2003/000084

Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 1-4 partly

because:

☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 1-4 partly
are so unclear that no meaningful opinion could be formed (*specify*):

Present claims 1 - 4 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and / or disclosure within the meaning of Article 5 PCT is to be found for only a very small proportion of the compounds to which the present claims relate. In the present case, the claims so lack support, and the application so lacks
.../...

☐ the claims, or said claims Nos. _____ are so inadequately supported
by the description that no meaningful opinion could be formed.

☐ no international search report has been established for said claims Nos. _____

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in the Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2003/000084

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>1-4</u>	YES
	Claims	<u>-</u>	NO
Inventive step (IS)	Claims	<u>1-4</u>	YES
	Claims	<u>-</u>	NO
Industrial applicability (IA)	Claims	<u>1-4</u>	YES
	Claims	<u>-</u>	NO

2. Citations and explanations (Rule 70.7)

Relevant documents (from the International Search Report)

- D1: WO0001249
- D2: WO0146355
- D3: Daskalov H. et al; "Influence of oxidized lipids in diets on the development of rainbow trout fry syndrome"; Journal of Fish Diseases, 23, 1 (January 2000), pages 7-14.
- D4: Olsen R.E. et al; "The influence of temperature, dietary polyunsaturated fatty acids, α -tocopherol and spermine on fatty acid composition and indices of oxidative stress in juvenile Arctic char, *Salvelinus alpinus* (L.)"; Fish Physiology and Biochemistry, 20, 1 (January 1999), pages 13-29.
- D5: Waagbø, R.; "The impact of nutritional factors on the immune system in Atlantic salmon, *Salmo salar* L.: a review"; Aquaculture and fisheries management, 25 (1994), pages 175-197.

The cited documents represent the general state of the art. The invention defined in claims 1-4 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed use. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1-4 is novel and is considered to involve an inventive step. The invention is industrially applicable.

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: III.

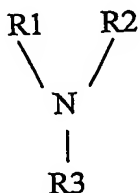
disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Consequently, the search and examination has been carried out only for those parts of the claims which appear to be supported and disclosed, namely those parts related to urea and the amines and amides in W00146355 (page 5, Table 1), namely: allylurea, hexylamine, N-ethyldiisopropylamine, N,N'-dimethylurea, Oxamide and butyramide.

Main Claim Request

1. Use of one or more marine oil and/or vegetable oil treated by urea and/or other amines or amides of formula (I),

wherein the said amines and amides are defined by the general formula (I):



wherein each of R1, R2 and R3 are independently chosen from H, C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, or RC(O)- or RN(H)-C(O)-C(O)- where R is H, C₁-C₁₀-alkyl or C₂-C₁₀-alkenyl, or R'N(H)-C(O)- where R' is C₁-C₁₀-alkyl, C₂-C₁₀-alkenyl, or H if at least two of R1, R2 and R3 are different from H,

and optionally one or more antioxidants, for production of a feed for marine species including fry, which reduces degradation of the feed.

2. Use of one or more marine oil and/or vegetable oil treated by urea and/or other amines or amides of formula (I), and optionally one or more antioxidants for production of a feed for marine species including fry for improving the health condition, and survival and growth rate of the fish.

3. Use for production of feed according to claims 1 or 2, for all aquatic species and crustaceans.

4. Use of one or more marine oil and/or vegetable oil treated by urea and/or other amines or amides of formula (I), and optionally one or more antioxidants for production of a feed for marine species and salmonids for reducing occurrence of heart rupture of the fish.